

**REMARKS/ARGUMENTS**

Claims 1-12 are currently pending in the application. Claims 1 and 12 have been amended solely for purposes of expediting prosecution. The former claims stand rejected as being anticipated by *Rallison* (U.S. Patent No. 6,369,952) ("*Rallison*") pursuant to 35 U.S.C. § 102(e). Applicants respectfully disagree. Applicants request that the Examiner reconsider the application in view of the comments and amendments herein. Applicants submit that for at least the reasons previously stated, the Examiner has not set forth a *prima facie* case of anticipation. Nevertheless, Applicants submit that the present claims are also in condition for allowance over the *Rallison* reference.

Applicants respectfully remind the Examiner that in order for an invention to be anticipated, the invention must be disclosed in the cited art reference in as much detail as claimed by Applicants. Attempting to meet that burden, the Examiner has relied on the disclosure of *Rallison* for the entirety of Applicants' audio and video reproduction apparatus. Applicants' invention includes:

- a head mounted display for converting a video signal into an image to present to a user;

- a pair of acoustic transducers each used for converting an audio signal into a sound to present to the user;

- detection means for detecting an orientation of the head of the user;

- image-changing means provided a video signal representing an image stretched over a wider range than a visual-field range visible to the user via the head-mounted display, the image-changing means for extracting a video signal representing an image stretched over the visual-field range visible to the user via the head-mounted display in accordance with the detected orientation of the head of the user and for supplying the extracted video signal to the head-mounted display; and

- sound-image localization processing means for performing out-of-head sound-image localization

processing based on transfer functions from a sound-image localized position of a provided audio signal to ears of the user in accordance with the detected orientation of the head of the user to produce a two-channel audio signal and for supplying the two-channel audio signal to the acoustic transducers.

Significantly, and as previously discussed, in relation to the sound-image localization processing means, the Examiner has merely relied on the left and right speakers and associated cable inputs of the head-mounted personal visual display with image generator disclosed by *Rallison* at col. 17, lines 23-30, Fig. 17A and reference characters 505 and 503. But those references do not describe all of the details of Applicants' claimed invention. Simply put, there is no indication that the reference discloses Applicants' sound-image localization processing means for changing a sound-image localized position of the audio signal reproduced by the acoustic transducers in accordance with the orientation of the head of the user.

To be sure, *Rallison* does disclose the use of a "head position tracker component" to provide an indication of "the orientation of the head." *Rallison*, col. 4, lines 16-19. However, the Examiner has not cited to any indication that the orientation of the head is used in changing the sound-image of the audio signal in accordance with that orientation. Indeed, in view of the cited disclosure of *Rallison* it appears that only the visually displayed image is changed as a consequence of the orientation of the head of its user determined by the head position tracker component. *Rallison*, col. 2, lines 18-26. No such application is cited in that disclosure with respect to the audio signals in the *Rallison* system and merely having left and right ear speaker signals as cited in *Rallison* is not Applicants' invention.

Applicants recognize that the Examiner has attempted to supplement the absence of the claimed sound processing means

from *Rallison* by citing to a dictionary. However, the dictionary does not provide the missing details of the claims. Just because the reference states that the *Rallison* device can provide a "simulated environment" does not mean that it necessarily simulates sound based on the orientation of the users head at all yet alone as in the manner of the features claimed by the Applicants. Indeed that particular disclosure would not even be considered sufficient to enable one to do so. Simply put, *Rallison's* argued disclosure of a "simulated environment" falls short of teaching all of the features of Applicants' invention. To this end, the very concept of a "simulation" suggests that there is something less than the actual environment being simulated.

While Applicants recognize that the specification may not be read into the claims, the following discussion of an embodiment from the specification illustrates Applicants' system. The Applicants' disclosed audio and video reproduction apparatus preferably receives a wide-angle image and a wide-angle sound and reproduces these signals through a head mounted display and headphones. The system can extract a video signal from the wide angle image in accordance with the system determined orientation of the user's head. In order to prevent the sound image reproduced by the headphones from being localized inside the head of the user, a sound-field-transforming circuit is provided. (See, e.g., Specification at 10, lines 5-8). Transfer functions of filters 51LA to 51LF and 51RA to 51RF can be controlled so that the localized position of the sound image is moved in the direction opposite to the detected movement of the user's head. Thus, the sound image may appear to be fixed at its original position in the external field. (See, e.g., Specification at p. 15, line 20 to p. 15, line 3.) Applicants' system is simply not disclosed or suggested by *Rallison*.

Accordingly, Applicants respectfully submit that for at least these reasons, claim 1 is in condition for allowance as all of the claimed features are not cited in the *Rallison* reference. Moreover, claims 2-11, which depend from claim 1, for at least the stated reasons are similarly in condition for allowance.

Finally, Applicants have also amended claim 12 to expedite prosecution. The subject matter of claim 12 may be compared to the subject matter of claim 1. To this end, claim 12 defines an audio and video reproduction apparatus, including, at least:

An audio and video reproduction apparatus, comprising:

a head-mounted display that converts a video signal into an image to present to a user;

a pair of acoustic transducers that converts an audio signal into a sound to present to the user;

magnetic or gyroscopic head orientation detector that determines changing orientation of the head of the user;

image-changing processor configured to receive a video signal representing an image of a wider range than a visual-field range visible to the user with the head-mounted display and to extract a video signal representing an image of a visual-field range visible to the user of the head-mounted display as a function of the changing orientation of the head of the user as detected by the head orientation detector and to provide the extracted video signal for presenting to the user by the head-mounted display; and

sound-image localization processor circuit configured to perform out-of-head localization processing to control a change in a sound image localized position of a provided audio signal by filtering the audio signal to produce a two-channel audio signal as a function of the changing orientation of the head of the user as detected by the head orientation detector.

Like the subject matter of claim 1, Applicants submit that this claim is in condition for allowance.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that she telephone applicants' attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

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